

R E M A R K S

Careful consideration has been given to the Official Action of July 11, 2006 and reconsideration of the application as amended is respectfully requested.

CLAIM REJECTIONS

Claims 3-9 and 11 were rejected under 35 U.S.C. 112, second paragraph.

Claims 1-14, 16-68, 103-114, 116-137, 176, 178, 209-210 and 212 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Schalkhammer et al (U.S. 5,866,433).

Claim 211 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Schalkhammer et al.

CLAIMS AMENDMENTS AND ARGUMENT

Amendatory action has been taken in the claims to relieve them from the rejection under 35 U.S.C. 112 and to emphasize features and characteristics by which the claims distinguish over the cited art. All claims presently of record are respectfully believed to be sufficiently definite to satisfy the dictates of 35 USC 112, second paragraph and patentably to distinguish over the cited art.

INDEPENDENT CLAIM

Independent Claims 1 and 211 have been replaced with independent Claims 213 and 263 respectively. Claims 213 and 263 contain the recitations formerly in Claims 1 and 211 with the following differences.

For Claim 213, a step of configuring a transmitter to emit chosen electromagnetic radiation is supported for example by page 79, lines 5-15, and page 85, lines 24-32, describing how the transmitter can be configured: a specific bandwidth of electromagnetic radiation emitted by transmitter can be chosen and a baseline of this electromagnetic radiation can be corrected for example at the beginning of each measurement session or prior to measurement. This gives the transmitter a configuration in which it emits the chosen electromagnetic radiation. In fact, page 7, lines 12-27, describes a transmitter configured to transmit electromagnetic radiation, enabling the measurement of resultant optical property of metallic islands structures. Thus the step "configuring a transmitter to emit chosen electromagnetic radiation" properly recites "configuring".

Regarding the timing of the "configuring" procedure, this procedure can be done prior to the measurement. The performance of this procedure prior to the measurement is described in Figs. 1A-1B, page 41, lines 8-16 and page 43, lines 4-8, describing a case in which by the time receptacle 38 is placed in receptacle receiving element 36 or adsorption system 50 is placed in receptacle 38, the transmitter is already configured to emit chosen electromagnetic radiation. For example, on page 41, lines 11-13, a path of light ray 34 is described: it is transmitted through receptacle receiving element 36 before there is receptacle 38 in it. When the receptacle is placed in receptacle receiving element 36, a light ray 40 propagating towards the same detector as light ray 34 is created; i.e. light ray 40 is created instead of light ray 34. Further, as follows from page 7, lines 12-27, the transmitter may belong to a kit, i.e. to a system not yet being operated in a measuring regime and not yet provided a sample.

Further, Claims 213 and 263 now recite comparing the measurements, identifying plasmon absorption, so as to allow generation, based on the identified plasmon

absorption, at least one of quantitative indication and a qualitative indication of at least one of the used matter or a functionality of the used matter. This procedure is performed in multiple examples of the invention, while describing the processing of the measurement results. This procedure enables obtaining the results described with reference to Figs. 4E, 4F, 4H, 4I, 8A-8C, 9A-9C, 11A-11C, 12A-12D, 13A and 13B, 14A and 14B, 18, and 19.

Dependent Claims

The following newly added claims contain recitations which correspond to the recitations in former claims (now canceled) as follows:

Claim 231 corresponds to former Claim 2;

Claims 232-235 correspond to former Claims 3-6;

Claims 270-275 correspond to former Claims 7-12;

Claims 236-237 correspond to former Claims 13-14;

Claims 238-242 correspond to former Claims 16-17 and 19-21;

Claims 276-282 correspond to former Claims 22-28;

Claims 243-245 correspond to former Claims 29-31;

Claims 283-293 correspond to former Claims 33-43;

Claims 325-330 correspond to former Claims 44-49;

Claims 246-262 correspond to former Claims 51, 53, 210, 54 and 56-68; and

Claims 294-324 correspond to former Claims 103, 105-112, 114, 116-117 and 119-137.

The following newly added claims draw clear support from the specification as filed as follows:

Claim 230: The use of the first structure consisting of essentially said

substrate carrying said plurality of spaced-apart metallic islands, is described for example on page 67, lines 14-25.

Claim 214 actually presents the subject matter of original Claim 69 somewhat reworded into the dependent form.

Similarly, Claims 215-218 and 269 present combinations of features clearly described in the Application.

Claims 219 and 264: The use of a laser is disclosed for example on page 45, lines 6-7, and lines 9-11 and Fig. 1C.

Claims 220, 221, and 265: The use of a monochromator is disclosed for example on page 45, lines 7-15 and Fig. 1C.

Claim 222: Using spectrophotometer is supported for example by page 79, line 8-11, and page 85, lines 24-26.

Claims 223 and 266: Using a scanning generator is supported for example by page 79, lines 11-12.

Claims 224-227: These claims are supported for example by page 79, lines 5-15, and page 85, lines 24-32.

Claims 228 and 267: These claims are supported for example by Figs. 1A-1C and by explanations provided in connection to Claims 1 and 211. They are further supported by page 79, lines 14-15, reciting "*In all measurements the reference beam was passed through air*". The reference beam would not be passed through the air if the light source would be adsorbed on the structure on one side and have the sample on the other side.

Claim 229: Passing incident radiation through sample is described for example on page 45, lines 13-15.

Claim 268: Using a directional light source is disclosed on page 45, lines

11-13, reciting "*Radiation is typically passed from source 12 via filter monochromator to a sample holder 16 ...*" and illustrated in Figs. 1A-1B.

In response to the Examiner's rejection of the claims under 35 U.S.C. 102(b) as allegedly being anticipated by, or under 35 USC 103 as allegedly being unpatentable over Schalkhammer et al. (US 5,866,433) Applicants respectfully submit the following.

US' 433 discloses a sensor for measuring an analyte concentration based on the use of a transparent substrate carrying an array of metallic islands and a biorecognitive layer selected to adsorb the dissolved analyte. According to this technique, **a certain analyte-specific fluorescent compound must be provided** to bind the analyte that is to be adsorbed. **This fluorescent compound is provided in the solution during the measurement.** The technique is based on such a property of the selected fluorophor that **its quantum yield or its fluorescence spectrum is significant only in the vicinity of the island layer and is dependent on a concentration of analyte to be determined.**

According to the Examiner's interpretation (see page 7 paragraph last but one of the Detailed Action where the Examiner comments to the Applicant's arguments in par. 1.2 submitted in reply to the previous Office Action), "*The Office maintains '422 teaches fluorophors are excited and emit radiation which has been properly read on the instant claims*".

US ' 433 does not disclose a combination of features of Claim 213 of the present application, at least because it does not disclose such features of the invention as:

- (a) configuring a transmitter to emit chosen electromagnetic radiation;
- (e) comparing said first and second measurement representative of the surface plasmon absorption of the first and second structures, respectively, said comparing identifying plasmon absorption, said

identifying allowing generation, based on the identified plasmon absorption, of at least one of a quantitative indication and a qualitative indication.

Also, US ' 433 does not disclose a corresponding combination of features of Claim 263 of the present application.

In fact, the technique of US ' 433 relies on the following method (col. 2, lines 12-37):

"A method of the invention for measuring the concentration of at least one analyte in a sample thus comprises the steps of;

- (a) contacting the sample with a biorecognitive sensor layer which is applied on or in close vicinity of at least one island layer consisting of islands of electrically conductive material,*
- (b) contacting the sample with an analyte-specific fluorescent compound of low quantum yield,*
- (c) binding the analyte-specific fluorescent compound to the analyte, which in turn is bound by the biorecognitive layer, the quantum yield of the analyte-specific fluorescent compound increasing strongly in the vicinity of the island layer,*
- (d) radiating excitation radiation which is suitable for excitation of the analyte-specific fluorescent compound into the at least one island layer,*
- (e) determining the fluorescence radiation emitted by the bound analyte-specific fluorescent compound as a measure for the analyte concentration.*

As an alternative to item (c), both the analyte-specific fluorescent compound and the analyte to be measured are bound by the biorecognitive layer, the quantum yield of the analyte-specific fluorescent compound again increasing strongly in the vicinity of the island layer".

This method of US '433 does not include the above feature (a) of the method of the invention. Furthermore, performing this feature (a) in the method of US '433 would render this method senseless: its step (e) would not make sense as the chosen fluorescence radiation would not be a measure for the analyte concentration. Moreover, the fluorescence light source of US ' 433 is being configured at the time of measurement, while the light source used in the invention may be configured prior to the measurement (its further emission may be assumed stationary or it may be controlled by a controller, such as a scanning controller, or it may be recorded, for example using a reference beam - see page 79, lines 11-15).

Further, the feature (e) of the list of features of Claim 213 in section above is not disclosed in US '433 because the technique of US ' 433 does not identify a plasmon absorption.

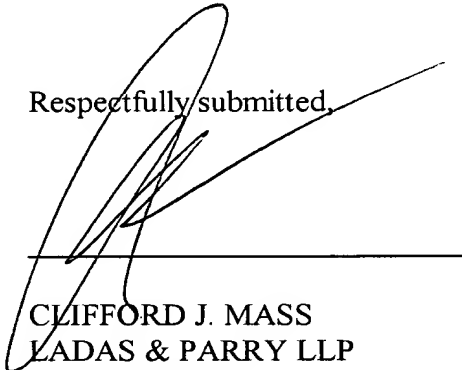
As for the dependent claims, Applicants respectfully submit that the above arguments and amendments to the basic claims, overcome these rejections as well. Moreover, considering the dependent claims, each of the claims referring to the plasmon absorbance is novel with respect to US '433. Considering the newly added dependent claims, each of the Claims 230, 215-229 and 264-269 presents a feature not found in US '433. For example, the technique of US '433 clearly does not utilize the transmission of laser light towards the detector. For another example, the technique of US '433 does not use a monochromator in between the transmitter and the sample, because in US '433 the transmitter is a fluorescent

material on the structure. Also, in the technique of US '433 does not utilize an external source. Also, in the technique of US '433 light transmitted through the structure does not pass through the sample. Hence, careful consideration of dependent claims is hereby respectfully requested.

It is therefore respectfully submitted that Schalkhammer et al., is not applicable to the claims under 35 U.S.C. 102. The claims express limitations not remotely suggested in Schalkhammer and produce entirely distinctive results. This also applies to Claim 263 and therefore, the rejection under 35 U.S.C. 103 is also believed to have been successfully traversed.

In view of the above, Applicants respectfully submit that all rejections and objections of record have been overcome and that the application is now in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,



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